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MRS 1616-HS

16X16 HD/SD routing switcher

User manual V1.01

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MRS 16HS 16X16 SD/HD routing switcher series

Ⅰ Description

MRS 1616-HS is a high performance and low cost HD/SD routing switcher which can be widely used in signal control of middle-small size broadcasting system. It adopts host and remote control panel separation structure. The two telecontrol panel modes of 16X16 /16X1 can meet the requirement of different control of multiple or single output busbar. The host is a 1RU chassis with dual power supply, and support the control of 2 telecontrol panels, and also support output changing –over of independent busbar of 16 channels' HD/SD self-adaptive embedded signals.

The system adopts field blanking switching, provide independent external synchronous interface, totally avoid shake when switching. It provides RS232 serial port, which can be connected with broadcast system to realize comprehensive automatic signal scheduling. Its design structure and performance gives users the best use security, applicable to the studio, broadcast center, broadcast and other various high-performance real-time occasions.

Ⅱ Features

- It adopts host and remote control panel separation structure, and supplies two switching modes of 16X16 and 16X1
- It supports independent 16 busbar output, and all HD/SD input
- The host can support at most 2 remote control panels' control at the same time
- 20bit digitization, high quality, high stability
- The field blanking processing provides an independent external sync. interface, and will ensure the switching without mute and flicker
- RS232, and RS485
- It supports computer control, easy to use

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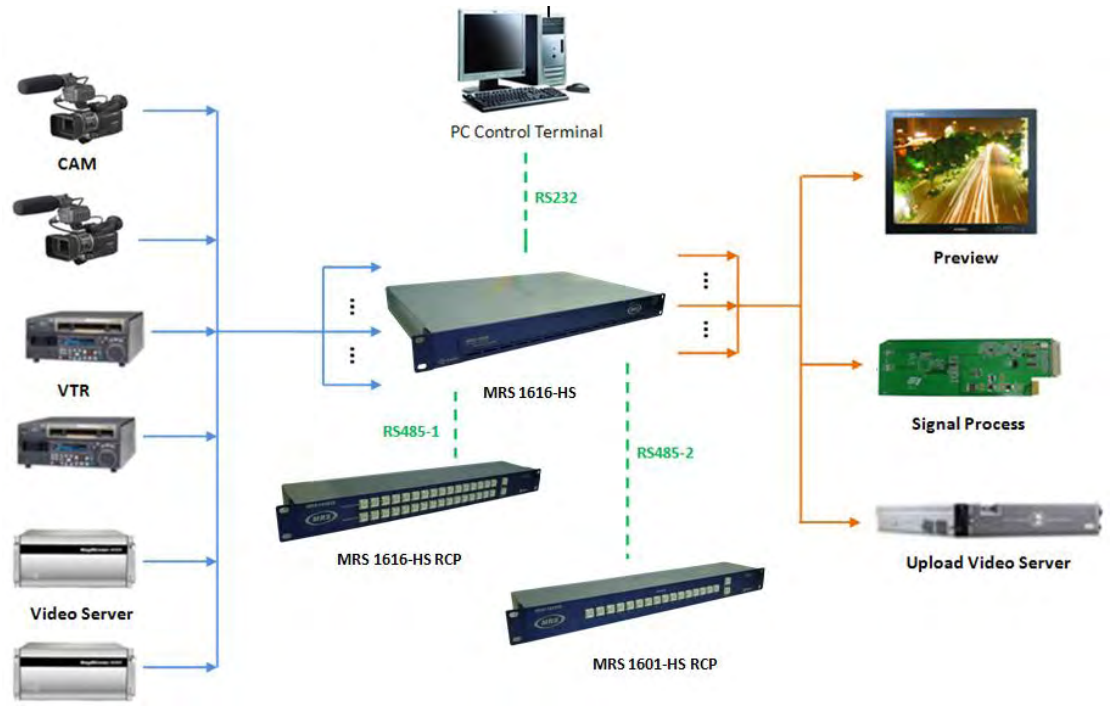
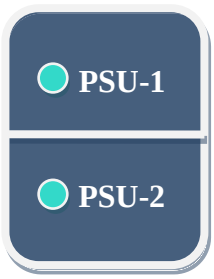
Ⅲ MRS 1616-HS application



Ⅳ MRS 1616-HS Front panel & rear panel diagram

4.1 MRS 1616-HS Front panel of the host

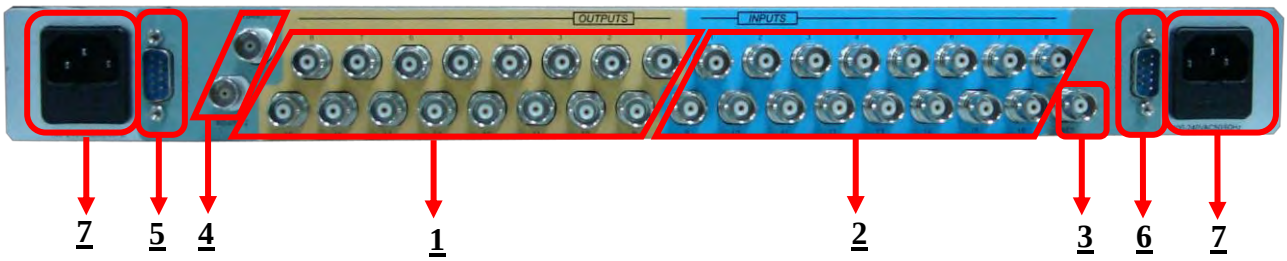
1. Indicator: Two indicators show the dual power working status



PSU-1: When the Power 1 is working, the indicator shows blue

PSU-2：When the Power 2 is working, the indicator shows blue

4.2 MRS 1616-HS Rear panel of the host



1. Output interface: All output interfaces in the yellow area. MRS 16HS with 16 HD/SD output interfaces, and support embedded signal.
2. Input interface: All input interfaces in the blue area. MRS 16HS with 16 HD/SD input interfaces, and support embedded signal.
3. External phase lock interface: it is used to connect with external composite black field sync. signal.
4. RS485 interface: It supplies 2 RS485 interfaces, which can be used to connect 2 telecontrol panels at the most (including MRS 1616-HS and MRS 1601-HS). Users can define the connection of RS485 and the telecontrol panel by “RS485 limits of authority” software.

   The default setting is: The two RS485 interfaces are connecting to 16X16 panel.
5. RS232-1 interface: connect to the computer. Users can set limits of authority by special software of the two RS485 interfaces, while, users can do long-range control by this

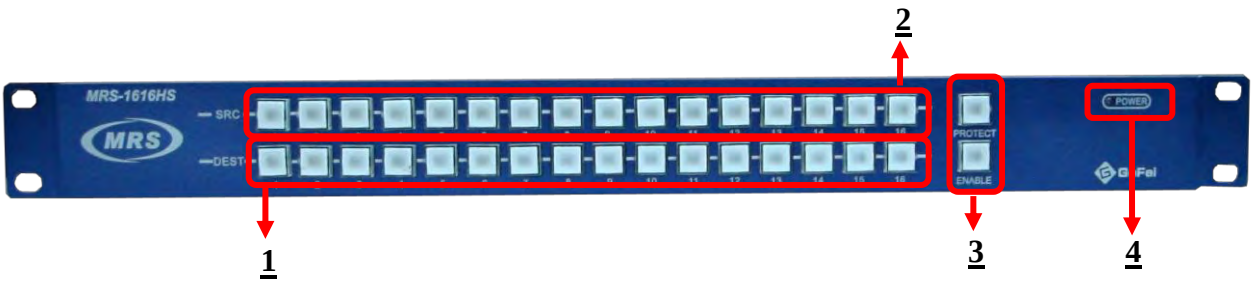
port. The length of the serial port line is less than 30m.

6. RS232-2 interface: Reserved.

7. AC power supply: The dual power design makes the system more stable and safe. Each power can work independently. The voltage is: 100~240VAC 50/60Hz.

Ⅴ MRS 1616-HS Front panel & rear panel of control panel diagram

5.1 MRS 1616-HS Front panel of the control panel



The telecontrol panel is a 16X16 one; it can do the change-over of 16 input/output signals.

1. Output button: There are 16 output buttons in this area (DEST). The indicator shows the current output channel.

2. Input button: There are 16 input buttons in this area (DEST). The indicator shows the current input channel.

（Remarks: Please first choose output channel, then output.）

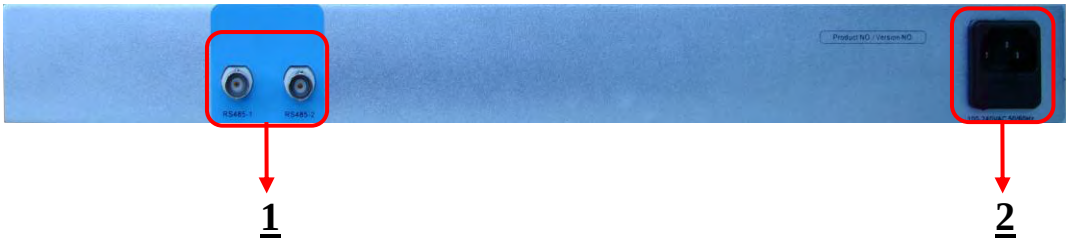
3. Function button: PROTECT and ENABLE

PROTECT: The locking button, is used to lock all buttons on the control panel. In order to avoid misoperation, press the button, the indicator shines. Press it for 3 seconds to turn off the indicator, it is under deblocking status.

ENABLE: Press this button to make the pre-input signal as the input signal. For example, make the current output channel as 13, and the input channel is 2, the indicator of 13 in DEST and the indicator of 2 in SRC is normally on. If users want to change the input channel from 2 to 5, please choose 5, and press ENABLE to make it into effect.

4. Power indicator: The blue indicator.

5.2 MRS 1616-HS rear panel of the control panel

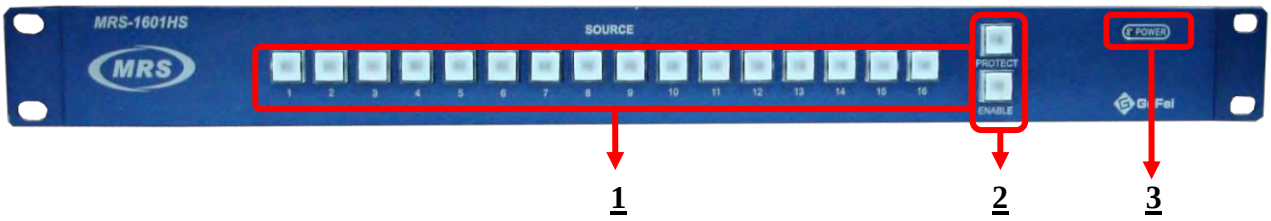


1. There are two RS485 interfaces on the rear panel; any one can be connect to the host (BNC).

   Remarks: Please do not connect the two RS485 on one telecontrol panel to one host at the same time.

2. Power: 100~240VAC 50/60Hz

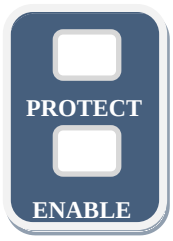
5.3 MRS 1601-HS Front panel of the telecontrol panel



The telecontrol panel is a 16X1 one; it can do the change-over of 16 input/output signals.

1. Output button: There are 16 output buttons in this area (SOURCE). The indicator shows the current output channel.

2. Function button: PROTECT and ENABLE



The locking button is used to lock all buttons on the control panel. In order to avoid misoperation, press the button, the indicator shines. Press it for 3 seconds to turn off the indicator, it is under deblocking status.

ENABLE: Press this button to make the pre-input signal as the input signal. For example, the current input channel is 5, if users want to change the input channel from 5 to 7, please choose 7, and press ENABLE to make it into effect

3. Power indicator: The blue indicator.

5.4 MRS 1601-HS rear panel of telecontrol panel

It is same with MRS 1616-HS.

Ⅵ MRS 1616-HS RS485 User-defined software of control authority

6.1 Installation

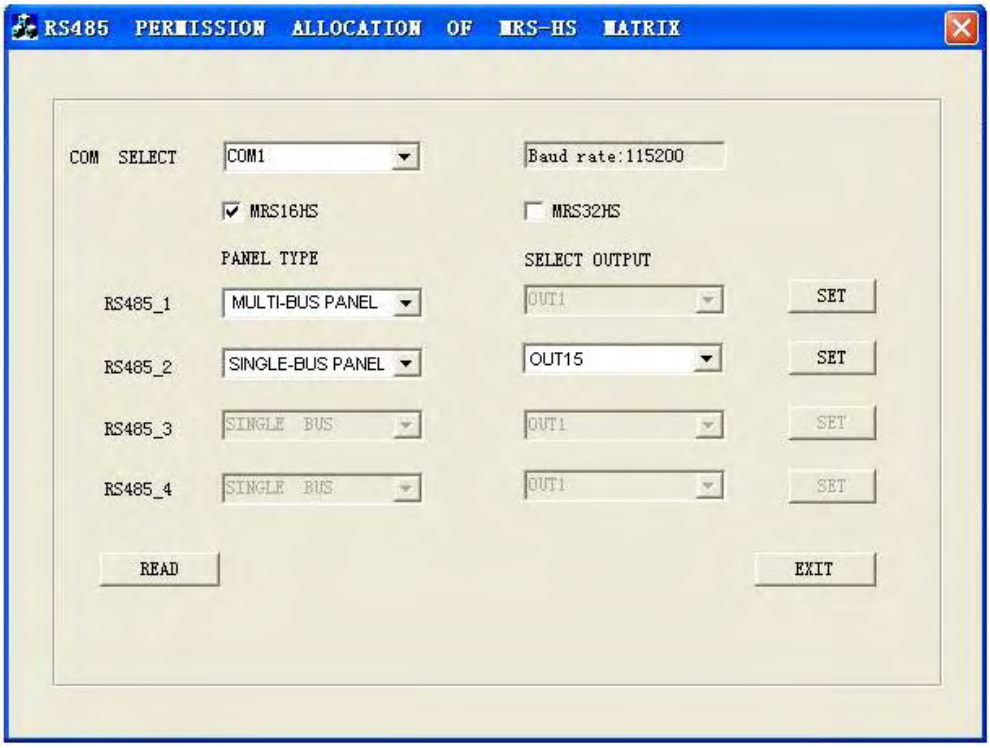
First, copy Mscomm32.dep, Mscomm32.ocx, and MSCOMM.SRG to C:\WINNT\system32.

Choose Mscomm32.ocx, click right-hand button “Open with” --“Other”--C:\WINNT\system32 to find Regsvr32.

Put “PCOMM.DLL” and “RS485 permission allocation of MRS-HS Matrix.exe” to one folder, execute “RS485 permission allocation of MRS-HS Matrix.exe” to finish the parameter setting.

6.2 Application

Double click “RS485 permission allocation of MRS-HS Matrix.exe”, open the following interface:



6-1 RS485 user-defined control software

1. COM Select：When the control terminals (such as computer, MOXA controller) have multiple serial ports, and will choose any port to connect to the switcher, the user needs to choose the right port to ensure the control. When there is only one serial port, the default port is (COM1).
2. Choose "MRS 16HS".
3. RS485 distribution and control: User can do individual "Panel Type" of the two RS485 of the host. Multi-bus panel suits for the remote panel of MRS 1616HS, Single-bus panel suits for the remote panel of MRS 1601HS. When the user choose "Single-bus panel", please do the setting of select output to make the control of single-bus into effect. Please click "SET" make every setting effective. If you open the software for the first time, please click "Read" to get the inside setting of the parameters.

Ⅶ Technical specification

The host input interface:

Input signal: 16*SD/HD-SDI

Input signal format: SD-SDI：525i30、625i25 self-adaptive

HD-SDI：720P50、720P60、720P60/M、1080i50
1080i60、1080i60/M、1080sf24、1080sf24/M、
1080P24、1080P24/M、1080P25、1080P30
Self-adaptive

Format: SMPTE 259M：270Mbit/s ;

SMPTE 274M：1.5Gbit/s

Interface type and impedance: BNC connection, 75Ω

Signal amplitude: >450mV

Max cable length: SDSDI<300m (Belden 1694A)

HDSDI<100m (Belden 1694A)

Host output interface:

Output signal interface: 16*SD/HD-SDI

Interface type and impedance: BNC connection, 75Ω

SDI output signal amplitude: 800±5%

SDI output interface jitter: <0.2UI

Synchronization input interface:

Interface type: 1*BB，PAL/NTSC

Host control interface:

Control interface: 2*RS232, DB9 male

(RS232-1used in the computer control, RS232-2 reserved)

2*RS485 (used in the connection of telecontrol panel),BNC connection

Host power supply:

2X120W redundancy

Size:

1RU chassis 44 mm x440 mm (19Inch) x320 mm

Control port of telecontrol panel:

Serial control port: 2*RS485 (connect to the host), BNC connection

Power supply of the telecontrol panel:

1X2.5W

Ⅶ Contact Us

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